

A rare species of *Calanthe* R.Br. recorded for the first time from India

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Abstract

Calanthe hancockii Rolfe (Orchidaceae) is reported here for the first time from India, where it is assessed as Critically Endangered [CR B1].

Introduction

The genus *Calanthe* R.Br. (Orchidaceae) with c. 207 species (Clayton and Cribb 2013) is distributed in tropical and subtropical Asia, Japan, SE Asia, New Guinea, Australia, Pacific Islands, tropical and South Africa, Madagascar, islands of the Indian Ocean, and the neotropics. Misra (2007) reported c. 32 species of *Calanthe* from India, whereas Clayton and Cribb (2013) mentioned occurrence of 28 species of which 26 are found in northern India and 2 in the south. During floristic exploration in Murlen National Park, Mizoram in April 2013 Ramesh Kumar and Sachin Sharma found *Calanthe hancockii* Rolfe a curious species, which had not been previously reported from India. A detailed description and photo-plate (Fig. 1) are provided to facilitate identification of the species and the present IUCN-status of *C. hancockii* in India is assessed.

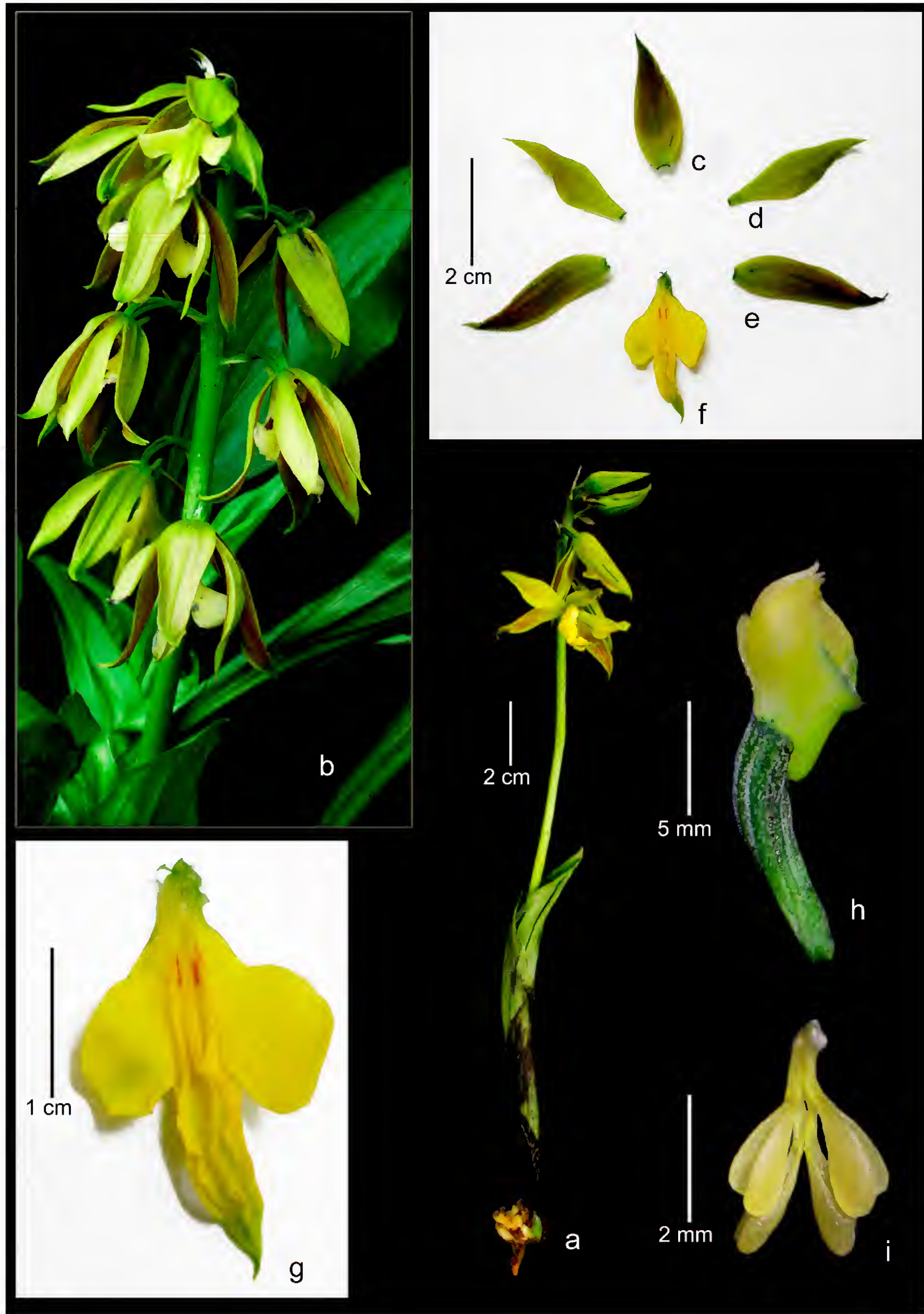


Fig. 1. *Calanthe hancockii* Rolfe **a**, habit; **b**, close-up of inflorescence and portion of leaves; **c**, dorsal sepal; **d**, petal; **e**, lateral sepal; **f**, lip; **g**, close-up of lip; **h**, column with spur; **i**, pollinarium (Ramesh Kumar 128292 & party).

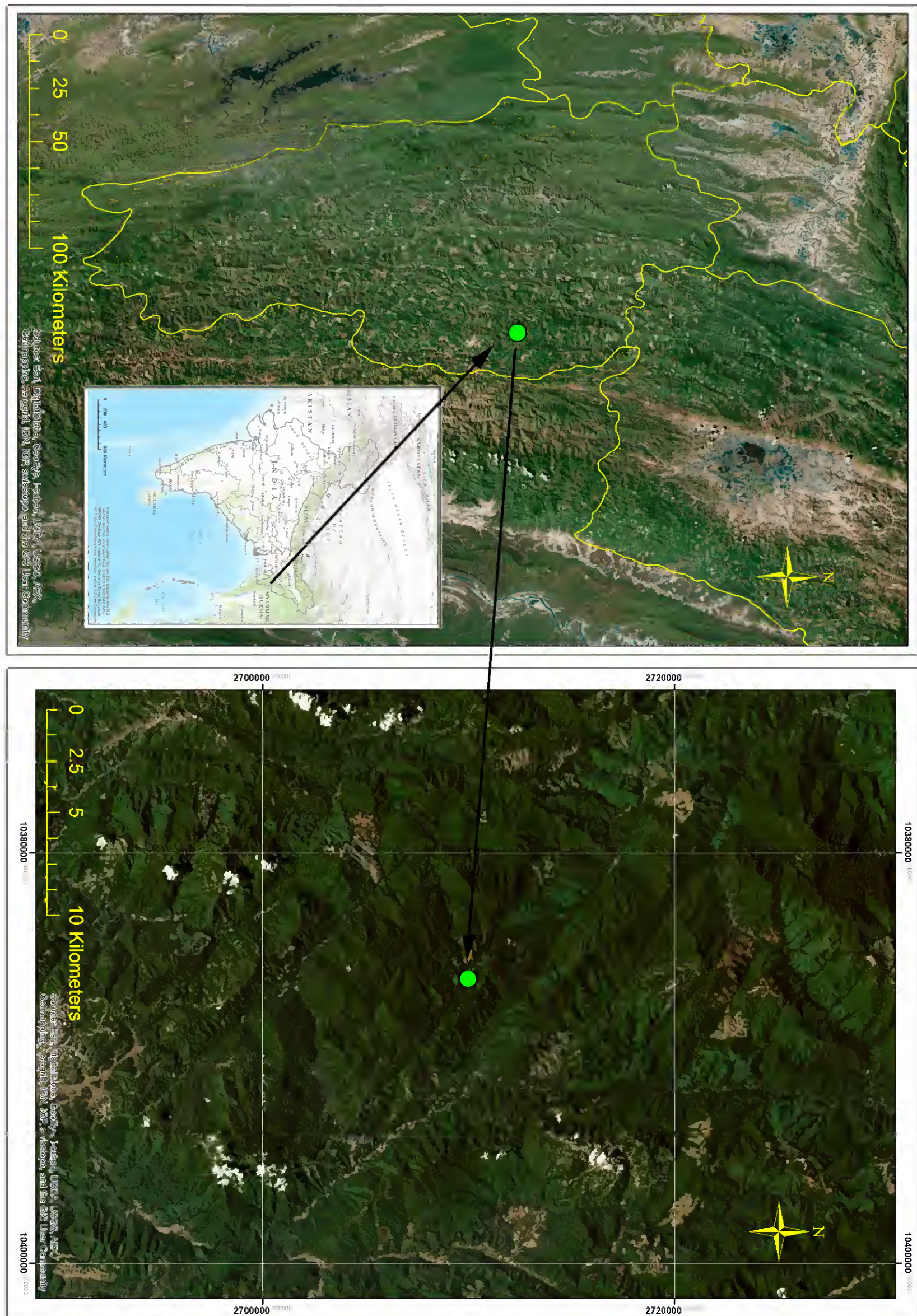


Fig. 2. Map showing occurrence of *Calanthe hancockii* Rolfe in India.

Taxonomic treatment

Calanthe hancockii Rolfe, *Bulletin of Miscellaneous Information, Royal Gardens, Kew* 1896 (119): 197 (1896).

X. Chen, P.J. Cribb and S.W. Gale, *Flora of China* 25: 304 (2009); D.A. Clayton and P.J. Cribb, *The genus Calanthe*: 132 (2013).

Type: China, Yunnan, Mengtsh, alt. 6600 ft, Apr 1893, *W. Hancock* 78 (holotype: K810926 – image!)

Terrestrial herbs, up to 50(–85) cm high. Rhizome inconspicuous. Pseudobulbs ovate to conical, covered by 3 or 4 sheaths, with numerous fleshy roots. Leaves 3, light green; petiole 5–20 cm long (depending on maturity), petioles basally clumped, 7–18(–25) cm long pseudostem; lamina elliptic to elliptic-lanceolate, 15–30(–40) × 5–12 cm, pleated, with margin undulate, apex acute. Inflorescence a raceme, arising from leaf-axil, pale green, 14–40(–80) cm long, puberulent; peduncle without sterile bract; rachis 6–30-flowered. Floral bracts persistent, shorter than ovary (including pedicel), narrowly ovate-lanceolate, 7–10 × 3–4 mm, pale greenish-yellow, sometimes with pinkish tinge, glabrous, with apex acuminate. Flowers slightly nodding, greenish-yellow with pale brownish to reddish tinge, large. Sepals almost similar, oblong-lanceolate, 22–30(–35) × 6–10 mm, puberulent outside, 5–7-veined; apex acute to subacuminate; lateral sepals sometimes oblique and slightly narrower than dorsal sepal. Petals subelliptic, sometimes oblique, 22–25 × 5–8 mm; apex acute to subacuminate, 3-veined. Lip shortly clawed, adnate to column, 3-lobed, bright yellow, sometimes with greenish tinge at base and apex and reddish or brownish tinge above the basal claw, with callus having 3 undulate keels, keels raised, median keel nearly reaching up to the apex of mid-lobe, lateral keels slightly shorter; side-lobes sub-rectangular to falcate-rectangular, 6–8 × 4–6 mm, obliquely truncate at apices, mid-lobe narrowly obovate-oblong, 10–12 × 3–5 mm, acute to acuminate or sometimes rounded at apex, terminated with a short mucro; spur slender, 2–3 × 0.8–1.2 mm, pale yellow, sometimes with greenish tinge, obtuse to rounded at base, finely pubescent at outer surface, white-pilose around the mouth, without and callus inside. Column 5–7 mm long, apically broad, finely pubescent; rostellum c. 1 mm long, bifid. Stigma large, 1-lobed. Anther broadly ovate, c. 4 mm long, pollinarium 3–4 mm long, with pollinia 8, 1.2–1.8 mm long, caudicles 0.8–1.6 mm long, 4 lower pollinia with longer caudicles and 4 upper with smaller caudicles, viscidium not well-defined. Ovary including pedicel oblong-obclavate, 0.8–1.2 × 1.5–2.5 mm, often curved, green, finely pubescent.

Flowering: April–May

Habitat: The species was found growing on a riverbank in moist soil along with ferns.

Distribution: China, India (here reported), Myanmar.

Specimens examined: CHINA: Yunnan Province: Chungtien, Chiren, alt. 2400 m, 11 May 1937, *T.T. YU* 11221 (PE, image); Fugong County, 14 May 2005, *Jin Xiao-Hua* 6980 (PE, image); Sichuan Province: Emeishan City, alt. 850 m, 21 Apr 1957, *K.H. Yang* 54132 (PE, image).

INDIA: Mizoram, Murlen National Park, alt. c. 1600 m, 08 Apr 2013, *Ramesh Kumar* 128292 & party (ASSAM).

IUCN-status: *Calanthe hancockii* is only reported from China, India and Myanmar. In India, we observed about 100 individuals of *C. hancockii* growing in a single patch (of an area <250 m², Fig. 2) in Murlen National Park, Mizoram. We were unable to locate any other population of it within the National Park. Although the collection site is within a protected area and is not threatened by anthropogenic activities, it is near to a small river and therefore the plants are prone to damage by grazing and trampling by wild animals. In India, *C. hancockii* fits the following IUCN criteria: Extent of Occurrence (EOO, Criterion B1) of *C. hancockii* is <100 km² and number of mature individuals (Criterion D) is <250. Although the Area of Occupancy (AOO) of the species in India is <10 km², it is not possible to apply ‘Criterion B2’ due to lack of any observation on decline [B2 (b)] or extreme fluctuations [B2 (c)] in population (if any). As per guidelines (IUCN 2012) - ‘only the criterion for the highest category of threat that the taxon qualifies for should be listed’ and therefore, we propose that the species be assessed as Critically Endangered [CR B1] in India. The status of *C. hancockii* at global level could not be assessed due to lack of sufficient data of Chinese and Burmese specimens and populations.

Notes: Based on morphological comparisons, *Calanthe hancockii* most closely resembles *C. striata* R.Br. ex Spreng. These two species can be distinguished by having an oblong-lanceolate dorsal sepal (vs. broadly elliptic to ovate-elliptic dorsal sepal in *C. striata*), narrower mid-lobe of the lip of 3–5 mm breadth (vs. broader mid-lobe of lip of 8–9 mm breadth in *C. striata*), callus-ridges of mid-lobe not highest at apex (vs callus-ridges of mid-lobe highest at apex in *C. striata*). The species has also some apparent similarities with *Calanthe fugongensis* X.H. Jin & S.C. Chen and *C. yaoshanensis* Z.X. Ren & H. Wang but can be easily distinguished by the shape of its lip.

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